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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,563	07/21/2004	Thomas Louis Toth	GEMS 0240 PUS	4562
27256	7590	11/25/2005	EXAMINER	
ARTZ & ARTZ, P.C. 28333 TELEGRAPH RD. SUITE 250 SOUTHFIELD, MI 48034			SONG, HOON K	
			ART UNIT	PAPER NUMBER
			2882	

DATE MAILED: 11/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

ES

Office Action Summary	Application No.		Applicant(s)	
	10/710,563		TOTH ET AL.	
	Examiner		Art Unit	
	Hoon Song		2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-20 is/are rejected.
- 7) ☒ Claim(s) 5 and 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 7-8, 10-11, 13-14 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagaoka et al. (US 6490337B1) in view of Yamazaki et al. (US 6778628B2).

Regarding claims 1, 13 and 20, Nagaoka teaches a computed tomography assembly or method comprising:

an x-ray gantry assembly (figure 1);

an x-ray source projecting a beam of x-rays (figure 1);

a detector assembly positioned opposite said x-ray source, said detector assembly receiving said beam of x-rays after said beam of x-rays pass through an object (figure 1);

a control mechanism in communication with said x-ray source and said detector assembly, said control mechanism comprising logic adapted to (figure 1):

execute at least one scout scan of said object, said at least one scout scan producing a first scout scan image (column 6 line 6);

generate an elliptical patient model based on said first scout scan image (column 6 line 31)

match said elliptical patient model to a phantom diameter approximation; (column 6 line 31);

generate a dose report based on said phantom diameter approximation (column 6 line 37); and

utilize said elliptical patient model to generate a dose minimized image sequence (column 6 line 37) and

Said display in communication with said control mechanism.

However Nagaoka fails to teach displaying said dose report on a display.

Yamazaki teaches a displaying which is displaying a dose report.

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the displaying device of Nagaoka to display the dose report, since the dose report display would ensure the operational status of the CT system so that it would improve the safety of the patient.

Regarding claims 2 and 18, Nagaoka teaches said at least one scout scan comprises two orthogonal scout scans (figure 5)

Regarding claim 3, Nagaoka teaches said at least one scout scan comprises: a lateral scout scan; and an anteroposterior scout scan (figure 3 and 5).

Regarding claim 4, Nagaoka teaches an elevation reference (patient table) in communication with said control mechanism; and wherein said logic is adapted to: utilize said elevation reference in combination with said at least one scout scan to generate said elliptical patient model (figure 2).

Regarding claim 7, Nagaoka teaches said logic is adapted to further comprise: utilizing said elliptical patient model to generate a dose minimized imaging sequence (x-ray dosage for each section along the helical scanning is reduced).

Regarding claims 8 and 14, Nagaoka teaches said dose report is generated by combining said phantom diameter approximation with said dose minimized imaging sequence (column 7 line 12).

Regarding claims 10 and 16, Nagaoka teaches dose minimized imaging sequence comprises: adjusting a current modulation of said x-ray source to minimize radiation exposure to said object (dose minimization, abstract).

Regarding claims 11 and 17, Nagaoka teaches dose minimized imaging sequence comprises; calculating object centering information; adjusting a current modulation of said x-ray source to compensate for said object centering information (column 4 line 3).

Regarding claim 19, Nagaoka teaches said at least one scan comprises a contour displacement sensor scan (figure 5).

Claims 9, 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagaoka as modified by Yamazaki as applied to claims 7 and 13 above, and further in view of Toth et al. (US 6307918B1).

Regarding claims 9, 12 and 15, Nagaoka teaches dose minimized imaging sequence comprises.

However Nagaoka fails to teach adjusting a bowtie element positioned within said x-ray source to minimize radiation exposure to said object.

Toth teaches a CT system having a bowtie filter (figure 5).

It would have been obvious to one of ordinary skill in the art at the time of the invention to adapt the CT apparatus of Nagaoka with the bowtie filter as taught by Toth, since the bowtie filter of Toth would further provide proper filtration for suitable x-ray beam quality and intensity for various type of scans (column 2 line 15).

Allowable Subject Matter

Claims 5-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 5, the prior art fails to teach at least one laser position measurement device in communication with said control mechanism; and wherein said logic is adapted to: utilize said laser position measurement device in combination with said at least one scout scan to generate said elliptical patient model as claimed in dependent claim 5.

Regarding claim 6, the prior art fails to teach at least one sonic displacement device in communication with said control mechanism; and wherein said logic is adapted to: utilize said sonic displacement device in combination with said at least one scout scan to generate said elliptical patient model as claimed in dependent claim 6.

Response to Arguments

Applicant's arguments with respect to claims 1-4 and 7-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nagaoka et al. (US 2004/0086076A1) teaches an X-ray CT device comprising scan condition setting means for setting conditions for a scan to obtain a cross-section image of the body, scanogram image collecting means for obtaining a scanogram image of the body being examined, display means for displaying the obtained scanogram image, scanning position setting means for using the displayed scanogram image to set the position for scanning a cross-section, cross-section image reconstructing means transmitting X-rays from the X-ray source while rotating the X-ray source around the body being examined according to the set scan conditions including the scanning position, and reconstructing the cross-section image from the data of X-ray passage through the body being examined detected by the X-ray detector, and control means for displaying the reconstructed cross-section image by the display means; characterized in that the X-ray CT device further comprises passage length calculating means for calculating the length of the passage of X-rays through the body being examined on the basis of the scanogram image, and electric current setting means for setting an electric current value to the high voltage generator

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for generating in the X-ray source X-rays adjusted according to the part of the body being scanned based on the calculated X-ray passage length and the scan conditions.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoon Song whose telephone number is (571) 272-2494. The examiner can normally be reached on 8:30 AM - 5 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272 - 2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HKS

11/20/05
HRS



DAVID V. BRUCE
PRIMARY EXAMINER